

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-40 (Canceled).

41. (Currently Amended) A semiconductor device comprising a pixel portion and a driver circuit on a substrate, comprising:

a base film formed on said substrate;

a first, second, and third semiconductor layers over said base film;

a first gate electrode adjacent to said first semiconductor layer with a gate insulating film interposed therebetween, wherein a first LDD region in said first semiconductor layer is not overlapped with said first gate electrode;

a second gate electrode adjacent to said second semiconductor layer with said gate insulating film interposed therebetween, a second LDD region in said second semiconductor layer is overlapped with said second gate electrode;

a third gate electrode adjacent to said third semiconductor layer with said gate insulating film interposed therebetween, a third LDD region in said third semiconductor layer is partly overlapped with said third gate electrode,

wherein said pixel portion comprises said first semiconductor layer, and said driver circuit comprises said second and third semiconductor layers,

wherein said ~~gate-insulating film~~ base film comprises a hydrogenated silicon oxynitride film,
and

wherein the concentration of oxygen, nitrogen, and hydrogen throughout the thickness of said

hydrogenated silicon oxynitride film is from 55 to 70 atomic%, from 0.1 to 6 atomic%, and from 0.1 to 3 atomic%, respectively.

42. (Previously presented) The semiconductor device according to claim 41, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disk player, an electronic game equipment, and a projector.

43. (Previously presented) The semiconductor device according to claim 41, wherein said semiconductor device is an electroluminescence display device.

44. (Previously presented) The semiconductor device according to Claim 41, wherein said substrate is a glass substrate.

45. (Currently Amended) A semiconductor device comprising a pixel portion and a driver circuit on a substrate, comprising:

a first, second, and third semiconductor layers over said substrate;

a first gate electrode adjacent to said first semiconductor layer with a gate insulating film interposed therebetween, wherein a first LDD region in said first semiconductor layer is not overlapped with said first gate electrode;

a second gate electrode adjacent to said second semiconductor layer with said gate insulating film interposed therebetween, a second LDD region in said second semiconductor layer is overlapped with said second gate electrode;

wherein said pixel portion comprises said first semiconductor layer, and said driver circuit comprises said second and third semiconductor layers,

wherein said ~~gate insulating film~~ base film comprises a hydrogenated silicon oxynitride film, and

wherein the concentration of oxygen, nitrogen, and hydrogen throughout the thickness of said hydrogenated silicon oxynitride film is from 55 to 70 atomic%, from 0.1 to 6 atomic%, and from 0.1 to 3 atomic%, respectively.

46. (Previously presented) The semiconductor device according to claim 45, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disk player, an electronic game equipment, and a projector.

47. (Previously presented) The semiconductor device according to claim 45, wherein said semiconductor device is an electroluminescence display device.

48. (Currently Amended) A semiconductor device comprising a pixel portion and a driver circuit on a substrate, comprising:

a first, second, and third semiconductor layers over said substrate;

a first gate electrode adjacent to said first semiconductor layer with a gate insulating film interposed therebetween, wherein a first LDD region in said first semiconductor layer is not overlapped with said first gate electrode;

a second gate electrode adjacent to said second semiconductor layer with said gate insulating

film interposed therebetween, a second LDD region in said second semiconductor layer is overlapped with said second gate electrode;

wherein said pixel portion comprises said first semiconductor layer, and said driver circuit comprises said second and third semiconductor layers,

wherein said ~~gate insulating film~~ base film comprises a hydrogenated silicon oxynitride film,

wherein the concentration of oxygen, nitrogen, and hydrogen ~~throughout the thickness~~ of said hydrogenated silicon oxynitride film is from 55 to 70 atomic%, from 0.1 to 6 atomic%, and from 0.1 to 3 atomic%, respectively, and

wherein said gate insulating film has a thickness between 40 and 150 nm.

49. (Previously presented) The semiconductor device according to claim 48, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disk player, an electronic game equipment, and a projector.

50. (Previously presented) The semiconductor device according to claim 48, wherein said semiconductor device is an electroluminescence display device.

51. (Currently amended) A semiconductor device comprising a pixel portion on a substrate, comprising:

a first base insulating film on said substrate;

a second base insulating film on said first base insulating film;

a semiconductor layer ~~layers~~ on said second base insulating film;

a gate electrode over said semiconductor layer with a gate insulating film interposed therebetween, wherein a LDD region in said semiconductor layer is overlapped with said gate electrode;

wherein ~~at least said gate insulating film and said first and~~ said second base insulating film ~~films~~ includes a hydrogen and silicon and oxygen, and

wherein the concentration of oxygen, nitrogen, and hydrogen ~~throughout the thickness of said~~ hydrogenated silicon oxynitride film is from 55 to 70 atomic%, from 0.1 to 6 atomic%, and from 0.1 to 3 atomic%, respectively.

52. (Previously presented) The semiconductor device according to claim 51, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disk player, an electronic game equipment, and a projector.

53. (Previously presented) The semiconductor device according to claim 51, wherein said semiconductor device is an electroluminescence display device.

54. (Currently amended) A semiconductor device comprising a pixel portion on a substrate, comprising:

a first base insulating film on said substrate;

a second base insulating film on said first base insulating film;

a semiconductor layer ~~layers~~ on said second base insulating film;

a gate electrode over said semiconductor layer with a gate insulating film interposed

therebetween, wherein a LDD region in said semiconductor layer is overlapped with said gate electrode;

wherein ~~at least said gate insulating film and said first and~~ said second base insulating film ~~films~~ includes a hydrogen and silicon and oxygen ,

wherein the concentration of oxygen, nitrogen, and hydrogen ~~throughout the thickness of said~~ hydrogenated silicon oxynitride film is from 55 to 70 atomic%, from 0.1 to 6 atomic%, and from 0.1 to 3 atomic%, respectively, and

wherein said gate insulating film has a thickness between 40 and 150 nm.

55. (Previously presented) The semiconductor device according to claim 54, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disk player, an electronic game equipment, and a projector.

56. (Previously presented) The semiconductor device according to claim 54, wherein said semiconductor device is an electroluminescence display device.

57. (Previously presented) The semiconductor device according to claim 41, wherein said second semiconductor layer comprises a second source region, a second drain region, and a second channel region between said second source and drain regions, said second LDD region is between said second channel and drain regions, and said second source region is in contact with said second channel region.

58. (Previously presented) The semiconductor device according to claim 45, wherein said second semiconductor layer comprises a second source region, a second drain region, and a second channel region between said second source and drain regions, said second LDD region is between said second channel and drain regions, and said second source region is in contact with said second channel region.

59. (Previously presented) The semiconductor device according to claim 48, wherein said second semiconductor layer comprises a second source region, a second drain region, and a second channel region between said second source and drain regions, said second LDD region is between said second channel and drain regions, and said second source region is in contact with said second channel region.

60. (Previously presented) The semiconductor device according to claim 51, wherein said second semiconductor layer comprises a second source region, a second drain region, and a second channel region between said second source and drain regions, said second LDD region is between said second channel and drain regions, and said second source region is in contact with said second channel region.

61. (Previously presented). The semiconductor device according to claim 54, wherein said second semiconductor layer comprises a second source region, a second drain region, and a second channel region between said second source and drain regions, said second LDD region is between said second channel and drain regions, and said second source region is in contact with said second channel region.

62. (Previously presented) The semiconductor device according to claim 41, wherein said semiconductor device further comprising:

a first insulating film over said first, second, and third gate electrodes;

a second insulating film over said first insulating film;

a third insulating film comprising organic resin over said second insulating film;

a pixel electrode over said third insulating film, said pixel electrode electrically connected to said first semiconductor layer.

63. (Previously presented) The semiconductor device according to claim 45, wherein said semiconductor device further comprising:

a first insulating film over said first and second gate electrodes;

a second insulating film over said first insulating film;

a third insulating film comprising organic resin over said second insulating film;

a pixel electrode over said third insulating film, said pixel electrode electrically connected to said first semiconductor layer.

64. (Previously presented) The semiconductor device according to claim 48, wherein said semiconductor device further comprising:

a first insulating film over said first and second gate electrodes;

a second insulating film over said first insulating film;

a third insulating film comprising organic resin over said second insulating film;

a pixel electrode over said third insulating film, said pixel electrode electrically connected to said first semiconductor layer.

65. (Previously presented) The semiconductor device according to claim 51, wherein said semiconductor device further comprising:

a first insulating film over said first and second gate electrodes;

a second insulating film over said first insulating film;

a third insulating film comprising organic resin over said second insulating film;

a pixel electrode over said third insulating film, said pixel electrode electrically connected to said first semiconductor layer.

66. (Previously presented) The semiconductor device according to claim 54, wherein said semiconductor device further comprising:

a first insulating film over said first and second gate electrodes;

a second insulating film over said first insulating film;

a third insulating film comprising organic resin over said second insulating film;

a pixel electrode over said third insulating film, said pixel electrode electrically connected to said first semiconductor layer.

67. (Currently Amended) The semiconductor device according to claim 41, the device further comprising:

~~a base film over said substrate,~~

an interlayer insulating film over the first, second, and third gate electrodes,

wherein the interlayer insulating film~~base film~~ comprises a hydrogenated silicon oxynitride film having an oxygen concentration from 55 to 70 atomic%, a nitrogen concentration from 0.1 to 6 atomic%, and a hydrogen concentration from 0.1 to 3 atomic%.

68. (Currently amended) The semiconductor device according to claim 45, the device further comprising:

~~a first base film over said substrate,~~

~~a second base film over said first base film,~~

an interlayer insulating film over the first and second gate electrodes,

wherein ~~at least said gate insulating film and said first and second base insulating films~~ the interlayer insulating film comprises a hydrogenated silicon oxynitride film having an oxygen concentration from 55 to 70 atomic%, a nitrogen concentration from 0.1 to 6 atomic%, and a hydrogen concentration from 0.1 to 3 atomic%.

69. (Currently amended) The semiconductor device according to claim 48, the device further comprising:

~~a first base film over said substrate,~~

~~a second base film over said first base film,~~

an interlayer insulating film over the first and second gate electrodes,

wherein ~~at least said gate insulating film and said first and second base insulating films~~ the interlayer insulating film comprises a hydrogenated silicon oxynitride film having an oxygen concentration from 55 to 70 atomic%, a nitrogen concentration from 0.1 to 6 atomic%, and a hydrogen concentration from 0.1 to 3 atomic%.

70. (Currently Amended) The semiconductor device according to claim 51,

an interlayer insulating film over the first and second gate electrodes,

~~wherein at least said first and second base films have~~ the interlayer insulating film comprises
a hydrogenated silicon oxynitride film having an oxygen concentration from 55 to 70 atomic%, a
nitrogen concentration from 0.1 to 6 atomic%, and a hydrogen concentration from 0.1 to 3 atomic%.

71. (Currently Amended) The semiconductor device according to claim 54,

an interlayer insulating film over the first and second gate electrodes,

~~wherein at least said first and second base films have~~ the interlayer insulating film comprises a
hydrogenated silicon oxynitride film having an oxygen concentration from 55 to 70 atomic%, a
nitrogen concentration from 0.1 to 6 atomic%, and a hydrogen concentration from 0.1 to 3 atomic%.